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DOI: https://doi.org/10.1093/eurheartj/ehr079

European Heart Journal
December 31st, 2010

Isolated Right Ventricular Ballooning Syndrome:

A New Variant of Transient Cardiomyopathy

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Short title: Isolated Right Ventricular Ballooning Syndrome

Word Count: 249

Key words: Cardiomyopathy, right ventricular dysfunction, echocardiography, Tako-tsubo syndrome

The authors have no conflict of interest to disclose.

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We describe the first case of an isolated right ventricular “Tako-Tsubo” cardiomyopathy. A 68-year-old woman was referred to the intensive care unit (ICU) due to acute right heart failure occurring after laparoscopic abdominal wall hernia repair. New T-wave inversions were documented in leads V2-V4, and V3R-V5R **(Panel A+B)**, and troponin T (0.46 ng/ml) was elevated. Coronary angiography was completely normal. Echocardiography revealed a severely dilated right ventricle (end-diastolic area = 27 cm^2) with reduced fractional area change (fac = 17%) and reduced longitudinal shortening (TAM = 16 mm). Moreover, the right midventricular lateral wall was hypokinetic, while left ventricular ejection fraction was fully preserved **(Panel C+D, Videos 1 and 2).** Echocardiography did not support the diagnosis of arrhythmogenic right ventricular cardiomyopathy. Any pulmonary or abdominal pathology as potential cause for volume or pressure elevation was excluded by thoraco-abdominal computed tomography. Follow-up echocardiography three days later revealed completely normal RV size and function. Treatment consisted of intravenous fluid resuscitation, vasopressors and inotropic drugs, and the patient fully recovered and could be discharged from the ICU six days after admission.

“Tako-Tsubo” cardiomyopathy is an acute cardiac syndrome characterized by transient wall-motion abnormalities, typically involving the left ventricular apex. Indeed, apical sparing midventricular variants have been described, and biventricular involvement is observed in approximately one third of patients. However, isolated right ventricular involvement as reported in our patient has not been documented so far. Thus, isolated right ventricular involvement may represent a distinct manifestation of “Tako-Tsubo” cardiomyopathy, and the pattern of left ventricular wall-motion abnormalities itself may not be pathognomonic for the diagnosis.

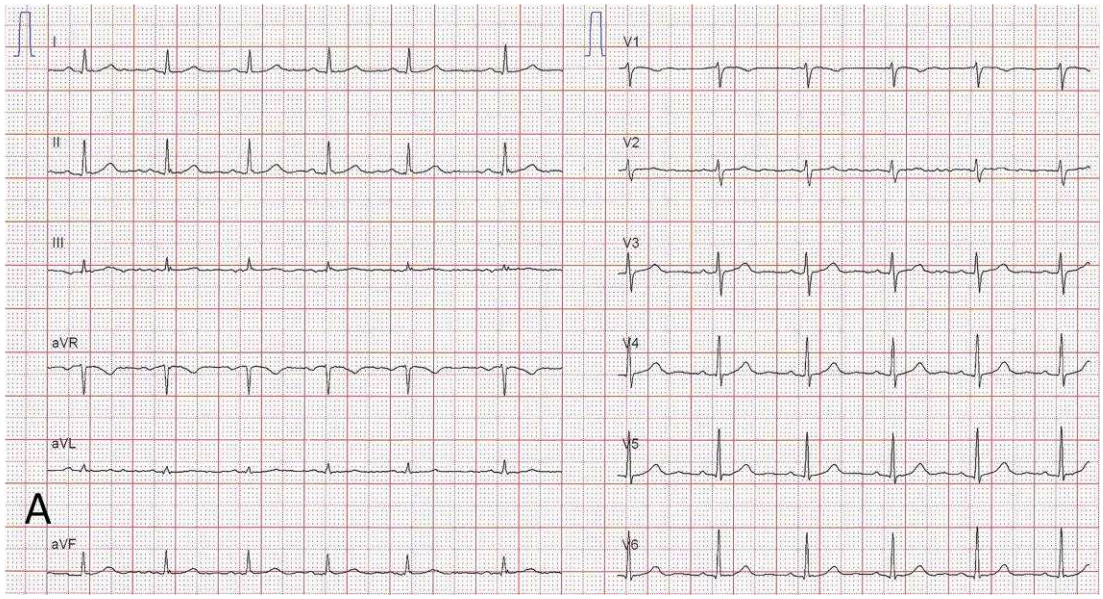
Figure legends

Panel A+B+C: Electrocardiography: **(A)** Normal sinus rhythm without any repolarization abnormalities. **(B)** T-wave inversions in leads V1-V4 and **(C)** V3R-V5R on admission.

Panel D+E: Right ventricular dilatation on admission. (**D)** Enddiastolic apical four chamber view. (**E)** Enddiastolic parasternal short-axis view.

Video 1: Apical four-chamber view. The right ventricle is dilatated with severely reduced fractional area change (fac = 17%) and reduced longitudinal shortening (TAM = 16 mm), while the left ventricle presents with normal ejection fraction without any regional wall motion changes.

Video 2: Parasternal short-axis view at the mitral valve level. The lateral wall of the right ventricle is hypokinetic, while the left ventricle presents with normal ejection fraction without any regional wall motion changes. Septal flattening during diastole reflects right ventricular volume or pressure overload.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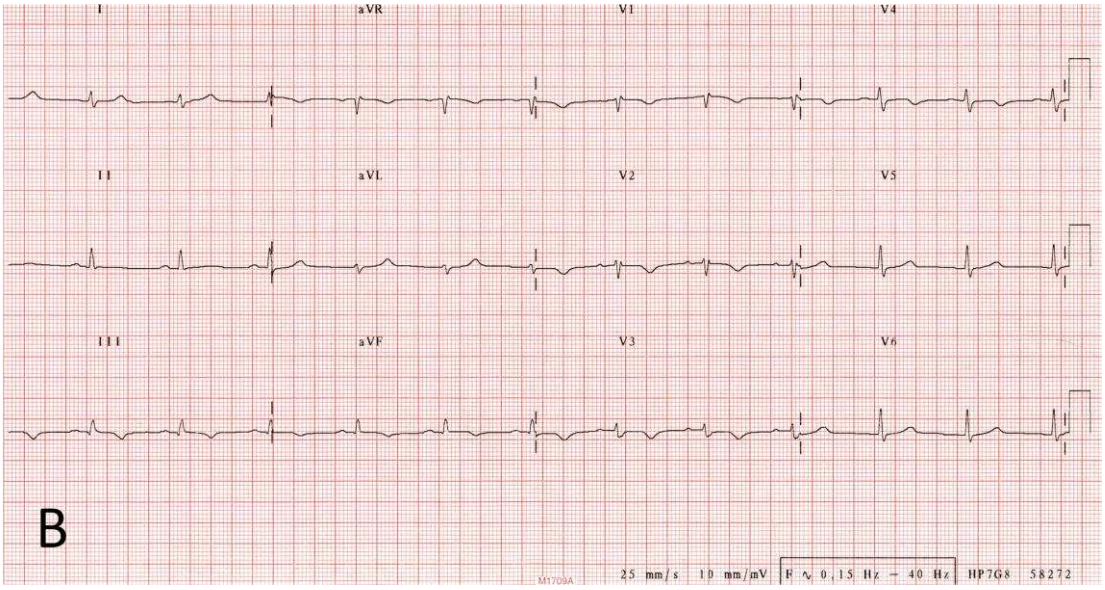
A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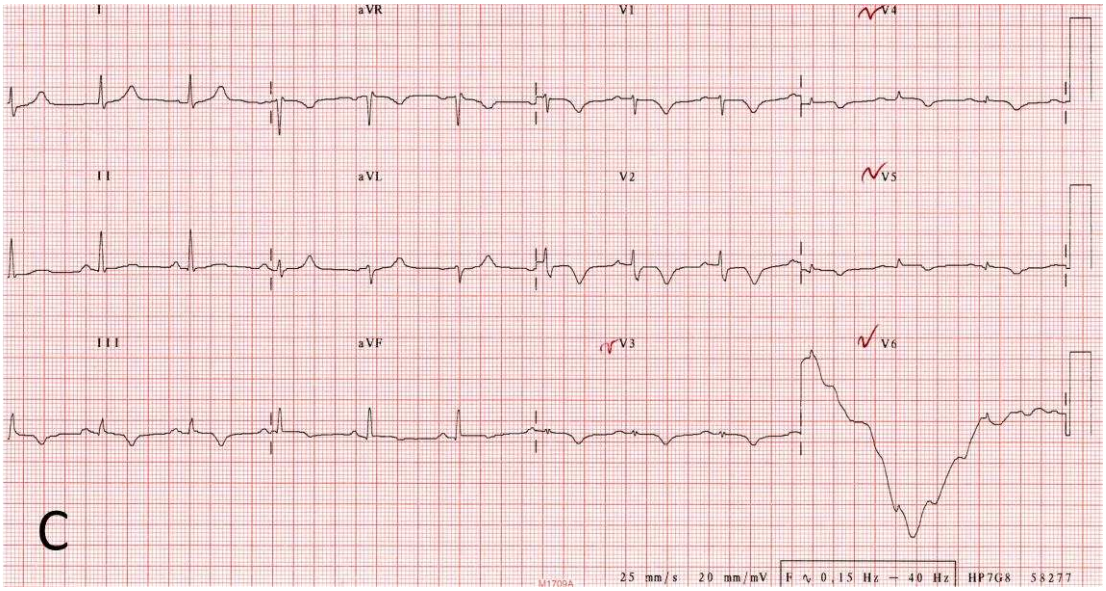
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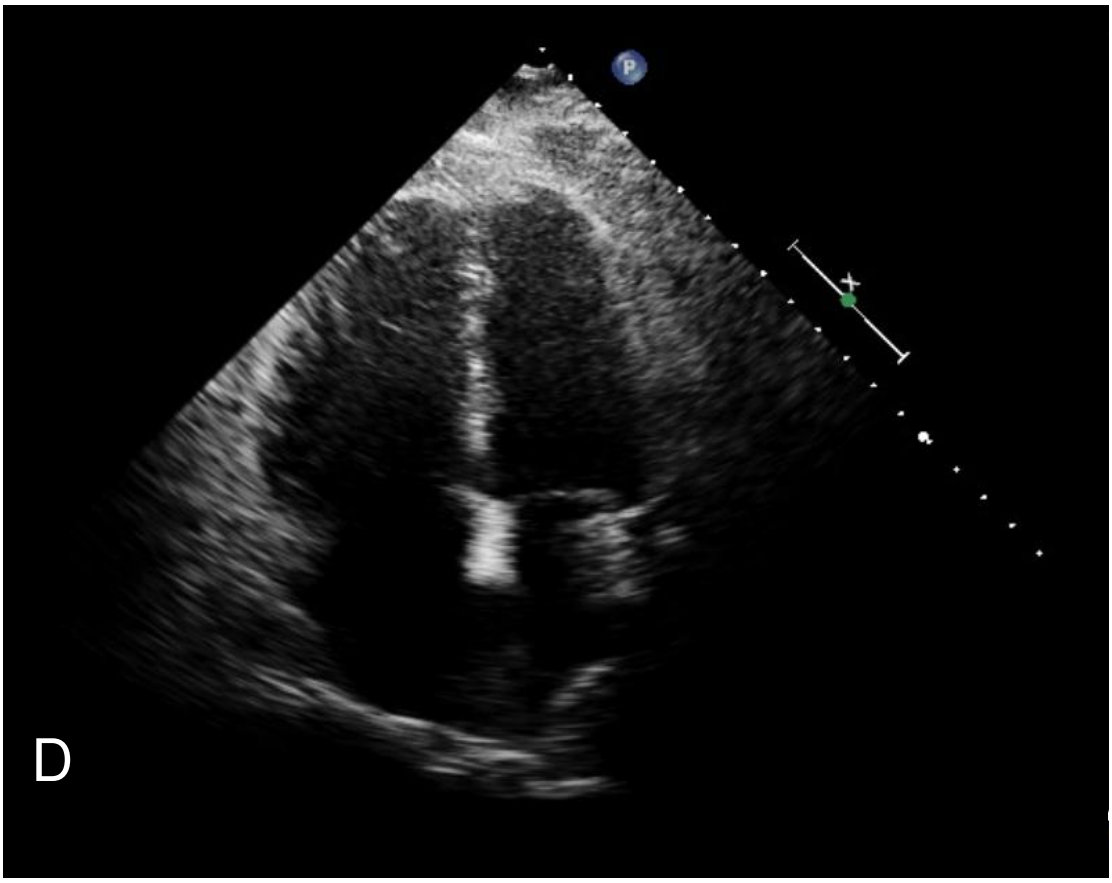
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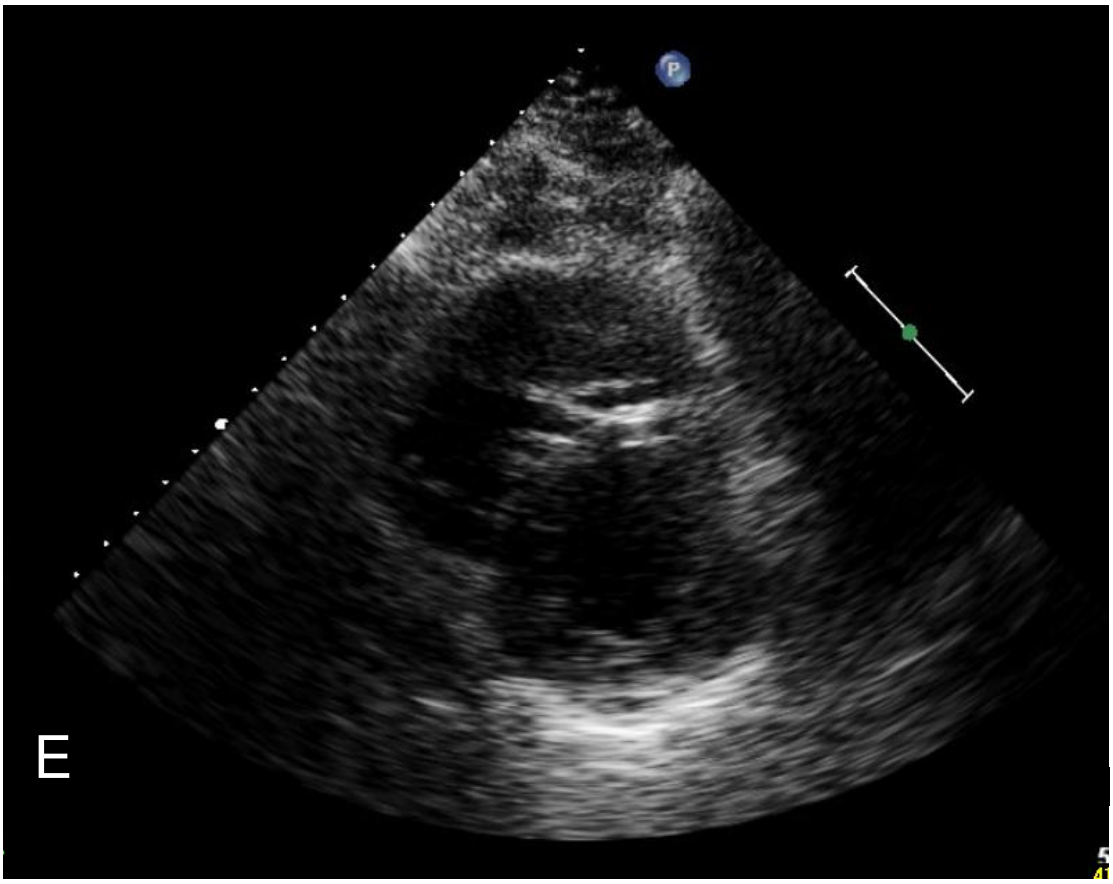
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